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What is claimed is:

1. A method for programming a mobile telephone over the air within a mobile telephone communication network, said mobile telephone communication network includes an over-the-air function, a customer service center, a mobile switching center, a base station controller, and a plurality of base transceiver stations, said method comprising the steps of:

6 sending a request over the air to a mobile telephone by one of said
7 - plurality of base transceiver stations within said mobile telephone
8 communication network to interrogate said mobile telephone's protocol
9 capability; and

10 in response to a detection of said request, responding with a
11 protocol capability response message over the air by said mobile telephone
12 to said one of said plurality of base transceiver stations, wherein said
13 protocol capability response message includes a BAND_MODE_CAP field
14 describing band and mode capability information of said mobile telephone.

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1 2. The method according to Claim 1, wherein said BAND_MODE_CAP field
2 further includes an analog cellular band subfield, a digital cellular band subfield,
3 and a digital personal communication service band subfield.

1 3. The method according to Claim 1, wherein said BAND_MODE_CAP field
2 is utilized to generate a preferred roaming list and a number assignment module
3 indicator block that are specific to said mobile telephone's capabilities.

1 4. The method according to Claim 1, wherein said protocol capability
2 response message further includes a NUM_SO field describing a number of
3 service options available to said mobile telephone.

1 5. The method according to Claim 4, wherein said NUM_SO field further
2 includes at least one SERVICE_OPTION field, wherein each SERVICE_OPTION
3 field indicates a service option supported by said mobile telephone.

1 6. The method according to Claim 5, wherein said at least one
2 SERVICE_OPTION field is utilized to initiate an appropriate provisioning of said
3 mobile telephone.

1 7. The method according to Claim 5, wherein data from said BAND_MODE-
2 CAP field and from said at least one SERVICE_OPTION field are sent to said
3 customer service center for a provisioning of a home location register.

1 8. The method according to Claim 1, wherein said mobile telephone
2 communication network may be an advanced mobile phone service or a code-
3 division multiple access mobile telephone communication network.

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9. A mobile telephone communication system for programming a mobile telephone over the air within a mobile telephone communication network, said mobile telephone communication network includes an over-the-air function, a customer service center, a mobile switching center, a base station controller, and a plurality of base transceiver stations, said mobile telephone communication system comprising:

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means for sending a request over the air to a mobile telephone within said mobile telephone communication network to interrogate said mobile telephone's protocol capability; and

means for receiving a protocol capability response message over the air sent by said mobile telephone, in response to a detection of said request, to said one of said plurality of base transceiver stations, wherein said protocol capability response message includes a BAND_MODE_CAP field describing band and mode capability information of said mobile telephone.

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1 10. The mobile telephone communication system according to Claim 9,
2 wherein said BAND_MODE_CAP field further includes an analog cellular band
3 subfield, a digital cellular band subfield, and a digital personal communication
4 service band subfield.

1 11. The mobile telephone communication system according to Claim 9,
2 wherein said BAND_MODE_CAP field is utilized to generate a preferred roaming
3 list and a number assignment module indicator block that are specific to said
4 mobile telephone's capabilities.

1 12. The mobile telephone communication system according to Claim 9,
2 wherein said protocol capability response message further includes a NUM_SO
3 field describing a number of service options available to said mobile telephone.

1 13. The mobile telephone communication system according to Claim 12,
2 wherein said NUM_SO field further includes at least one SERVICE_OPTION field,
3 wherein each SERVICE_OPTION field indicates a service option supported by said
4 mobile telephone.

1 14. The mobile telephone communication system according to Claim 13,
2 wherein said at least one SERVICE_OPTION field is utilized to initiate an
3 appropriate provisioning of said mobile telephone.

1 15. The mobile telephone communication system according to Claim 13,
2 wherein data from said BAND_MODE-CAP field and from said at least one
3 SERVICE_OPTION field are sent to said customer service center for a provisioning
4 of a home location register.

16. The mobile telephone communication system according to Claim 9, wherein said mobile telephone communication network is a code-division multiple access mobile telephone communication network.

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17. A mobile telephone within a mobile telephone communication network, said mobile telephone communication network includes an over-the-air function, a customer service center, a mobile switching center, a base station controller, and a plurality of base transceiver stations, said mobile telephone comprising:

means for receiving a request over the air from one of said plurality of base transceiver stations within said mobile telephone communication network to interrogate said mobile telephone's protocol capability; and

means for sending a protocol capability response message over the air, in response to a detection of said request, to said one of said plurality of base transceiver stations, wherein said protocol capability response message includes a BAND_MODE_CAP field describing band and mode capability information of said mobile telephone.

1 18. The mobile telephone according to Claim 17, wherein said
2 BAND_MODE_CAP field further includes an analog cellular band subfield, a digital
3 cellular band subfield, and a digital personal communication service band
4 subfield.

1 19. The mobile telephone according to Claim 17, wherein said protocol
2 capability response message further includes a NUM_SO field describing a
3 number of service options available to said mobile telephone.

1 20. The mobile telephone according to Claim 19, wherein said NUM_SO field
2 further includes at least one SERVICE_OPTION field, wherein each
3 SERVICE_OPTION field indicates a service option supported by said mobile
4 telephone.

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